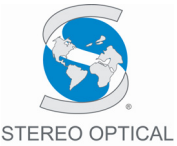
REFERENCE
AND
INSTRUCTION MANUAL

OPTEC® 1000
VISION TESTER



Stereo Optical Company, Inc.
8623 W. Bryn Mawr Ave., Suite 502, Chicago, IL 60631-3501 USA
Phone: 1.773.867.0380 or 1.800.344.9500 Fax: 1.773.867.0388
Email: Sales@StereoOptical.com
www.StereoOptical.com

©Copyright 2009 Stereo Optical Company, Inc.
Optec is a registered trademark of Stereo Optical Company, Inc.

TABLE OF CONTENTS

I. Introduction 1

II. Vision Testing 2

III. Operating the Control Panel of the OPTEC® 1000 3

a. Figure #1 4

IV. Administering the Tests 6

V. Maintenance of the OPTEC® 1000 Vision Tester 7

VI. Figure #2 8

Figures #3 and #4 9

VII. Test Slides 10

I. INTRODUCTION

Good vision is a precious gift, which should be guarded, cherished, and nurtured throughout life. To maintain good vision, frequent vision screenings and periodic visual exams are necessary. In this way, an awareness of inadequate vision or changes in vision can be noted. The eye-care professional can then correct most visual problems. Without these screenings, many children and adults would have undetected visual difficulties, having a direct effect on their quality of life.

Eye-care professionals feel that the earlier vision screening can begin, the more rewarding the results can be. This attention should be continued throughout adult life, with specific attention to the working years.

Stereo Optical's OPTEC® 1000 Vision Tester does this screening very efficiently. It is a precision instrument designed to do quick, accurate, reliable, and confidential screening. It will identify those who have a problem and need professional assistance.

THE OPTEC® 1000 VISION TESTER

The OPTEC® 1000 is engineered for ease of use. The instrument is automatic with no moving parts. The instrument weighs only 12 pounds and has a convenient handle for easy portability. The OPTEC® 1000 can be used on a desk, tabletop or countertop, requiring less than two square feet of space. All tests are concealed in a closed housing which allows only the subject being tested to view the targets.

The disposable headrest tissues insure the applicant a hygienic environment. The headrest also triggers the illumination for the test when pressure is applied. If the subject backs off or is in the wrong position, there will be no light in the instrument.

All tests required have been mounted on one easy to change slide.

For the operator, all switches are conveniently located on a remote control panel that can be placed anywhere for the operator's convenience. Each switch is color coded for immediate identification.

II. VISION TESTING

To be a skillful tester you must become familiar with the OPTEC® 1000 Vision Tester.

Look into the instrument and note what happens when the eye switches are ON and OFF. It is important to recognize whatever the subject may be describing and be able to answer any questions. Concentrate on acquiring a smooth delivery of instruction and description of the test target. The tester's expertise can help relax the subject, get better cooperation and a more accurate response.

When speaking to the subject, never act surprised or provoked by their responses or lack of response. Give the subject every opportunity to demonstrate their best vision.

If the subject is wearing glasses or contact lenses, they should wear them during the testing to determine whether they meet the requirements for corrected vision.

The table or counter should be of convenient height with sufficient surface space for the instrument. Normal room lighting is acceptable, but care should be taken to avoid light shining on the lenses or on the subject's face.

III. OPERATING THE OPTEC® 1000

The first step is to connect the control panel to the instrument. Connect the multi-prong plug to the back of the control panel. The plug will fit in only one way. Push the plugs together and tighten the screw on each side of the plug. You should not have to unplug the control panel once you have joined the instrument and panel together.

Plug control panel into an electrical outlet by using the black cord with the three (3) prong plug. (110 V AC)

CONTROL PANEL OPERATIONS

CONTROL SWITCHES: From left to right; (see figure #1)

Figure #1

TOP ROW:

First: ***Right Eye Switch:*** Orange color; when the switch is turned ON (depressed) the right eye will see the target, when the switch is turned OFF (raised) the right eye will see nothing.

Second: ***Left Eye Switch:*** Green color; same as above. When both switches are ON together, the subject will see with both eyes (binocularly).

Third: ***Day/Night Control:*** White color; when this switch is raised, daylight conditions are simulated in the instrument. When the switch is depressed, night-time conditions are simulated in the instrument.

Most testing is done under day-light conditions.

Fourth: ***Power Switch:*** Red color; this controls the power for the instrument. Depressed, the power is ON. Raised, the power is OFF.

Fifth: ***Ready Light:*** Green color; this will light when the subject applies pressure to the headrest trigger and is in the proper position to be tested.

MIDDLE ROW: Perimeter Test

First: ***Yellow Color:*** 45° nasal perimeter test. When the switch is held down, a momentary light will flash in the face plate. The light will appear on the opposite side from the side you are testing.

Second: ***Blue Color:*** 55° temporal perimeter test

Third: ***Blue Color:*** 70° temporal perimeter test

Fourth: ***Blue Color:*** 85° temporal perimeter test

These switches are momentary. They will only flash as long as pressure is applied and will flash along the side you are testing. The same switches are used for testing both right and left sides. Turn the eye switch off for the eye not being tested.

BOTTOM ROW: Test Switches

First: ***TEST #1:*** White color; depress switch and test will be illuminated. Press again to turn illumination off when test is finished. Proceed to TEST #2.

Second, Third and Fourth: ***TEST #2, #3 AND #4:*** White color; same as above. If you are only doing one test, you can leave it on and the light will go off or on automatically as the subjects apply pressure to the headrest trigger.

IV. ADMINISTERING THE TEST

Turn the power on by depressing the **red** power switch. Depress the two eye switches--**orange** and **green**, being sure the **white** switch (day/night) is **NOT** depressed but in the raised position. Pull off the first headrest tissue so there is a clean tissue available for the subject.

Have a subject step forward and adjust the height of the instrument. Have the subject hold the instrument with both hands, one on each side, looking into the lenses. The subject's forehead should press against the headrest trigger. The **green** ready light on the control panel should light.

Depress the switch marked TEST #1 and administer the test. Check your score key for correct answers. Depress switch marked TEST #1 again so it will turn off. Proceed to switch marked TEST #2 for the next test. Continue this process until all testing is completed.

PERIMETER TESTING

Ask the subject to look straight ahead. Use the top line of the center column of an acuity test as a fixation point. Turn left eye off (switch raised). Press the switches in the middle row of the control panel in any sequence. Ask the subject to point to where they see a light flashing. Once you have gone through all four positions, turn the left eye on and the right eye off, following the same procedures.

IMPORTANT CHECKPOINTS:

- Be certain the instrument is plugged into a 110-120V AC outlet.

- Push RED power switch on control panel to activate the instrument.
- Check both eye switches to be certain they are depressed (ON).
- Tear off headrest tissue so a clean tissue is ready for the next subject.
- Be certain the subject presses their forehead against the headrest trigger so the illumination in the unit is activated and the GREEN "READY" indicator on the control panel is lit.
- Be certain you have a score key available.

V. MAINTENANCE OF THE OPTEC® 1000 VISION TESTER

Stereo Optical's OPTEC® 1000 Vision Tester was designed to minimize maintenance. It has been engineered and built for a lifetime of use. The only annual maintenance required is simple and does not necessitate a service call. There are no moving parts with the OPTEC® 1000.

The only components requiring occasional maintenance are:

- **EYEPIECE LENSES:** The external sides of these lenses need to be cleaned occasionally (see figure #2). Care should be taken not to use any abrasive material on these lenses. Use the cleaner supplied with the vision tester. It is important to dry the lenses with a soft cotton cloth or tissue.
- **CLEANING OF SLIDE:** Open the slide cover door and remove the slide. Use a damp soft cloth or tissue with lens cleaner and wipe both sides of the slide.

- **EXTERIOR:** The aluminum and ABS plastic of which the instrument body is made can be cleaned with a damp cloth and a mild detergent. Make sure control panel is disconnected.
- **CHANGING LIGHT BULBS:** When you have a burned out bulb, identify which test is affected. Turn the power (RED switch) off. Unplug the instrument from the electrical outlet. Remove screws from top left and right rear of instrument. Take a firm grasp of the two knobs in the center of the back door and pull back and down (see figure #3). The door will open and the eight (8) light bulbs will be exposed (see figure #4). With two fingers slide the burned-out bulb and socket out. Replace the bulb with a blue coated bulb, (Optec® 2000-226). It is suggested that you replace the bulb opposite the burned out one at the same time. Slide the socket and bulb back into the track with the screw head on the socket top, on the outside of track. Close the door and replace the two screws. Turn power back on by plugging the cord into wall socket and depressing the red switch. You are now ready to continue testing.

Figure #2

Figure #3

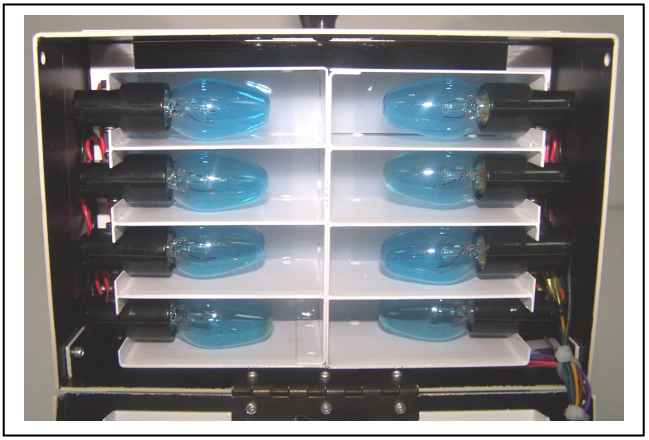


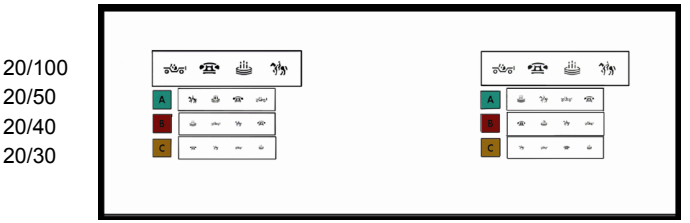
Figure #4

VII. TEST SLIDES

MULTIPLE ACUITY TEST SLIDE (1000-23)
ALLEN ACUITY TEST

1. Test #1

2. Both Eyes Illuminated



Before doing the Pre-School test use the two training cards supplied with the Vision Tester to familiarize the child with the pictures he or she will see in the Vision Tester. Review the training cards until the child is familiar and comfortable with the pictures. Ask the child to identify the pictures in the top line. Correctly identifying three or more pictures is a pass on this line.

- Read from left to right
- Both Eyes: 20/100 Top Line - Car, Phone, Birthday Cake, Horse

3. Test #2

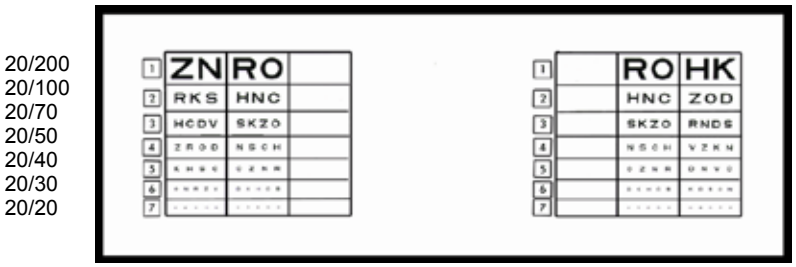
4. Right Eye Illuminated

5. Left Eye Occluded

Now continue with lines A, B, and C. The last line in which the child correctly identifies three or more pictures is their Acuity level. Repeat the test with the left eye illuminated.

MULIPLE ACUITY TEST SLIDE (1000-023)
LETTER ACUITY

1. Test #3 & 4
2. Right & Left Eye Illuminated



Left Eye **Right Eye**

Ask the subject, "How many columns of letters do you see?" The answer is three.

Then ask the subject to read line 5 completely. If this is correct, proceed to line 6, if correct proceed to line 7, if correct, the subject has 20/20 vision, or better, in the right eye, left eye, and both eyes together. The scoring key is printed on the record form.

Two or more letters incorrectly identified on any one of lines (3 to 7) PER COLUMN, is considered a FAIL for that acuity level IN THAT COLUMN.

A DIFFERENT ACUITY READING FOR EACH COLUMN IS POSSIBLE WITH THE CENTER COLUMN BEING THE MOST CRITICAL. It is critical because this is the binocular acuity test, while the right and left columns are only monocular acuity tests. Our actual vision is binocular, not monocular.

A monocular acuity test can be administered on the right or left eye by occluding the eye not being tested. With one eye occluded, the subject will only see two columns with letters.

Some of the binocular irregularities that can occur are:

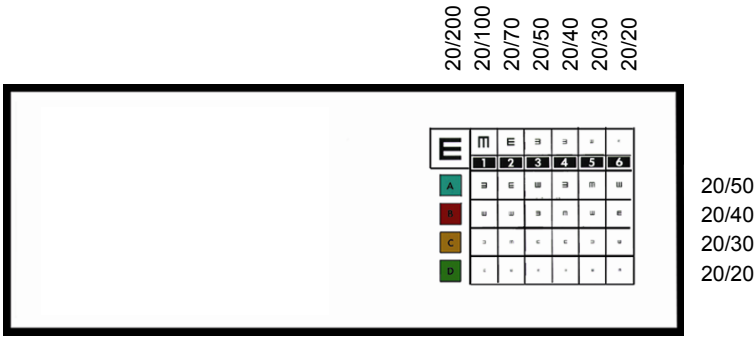
1. Either right or left column appears fuzzy and blurred
2. A complete lack of targets in either right or left column will indicate a vision problem
3. An intermittent disappearance of targets in either the right or left column
4. Failure to fuse the right and left eye area of the slide into three columns of letters

ELEMENTARY TEST SLIDE (1000-22)
TUMBLING “E” ACUITY

1. Test #1 & 2

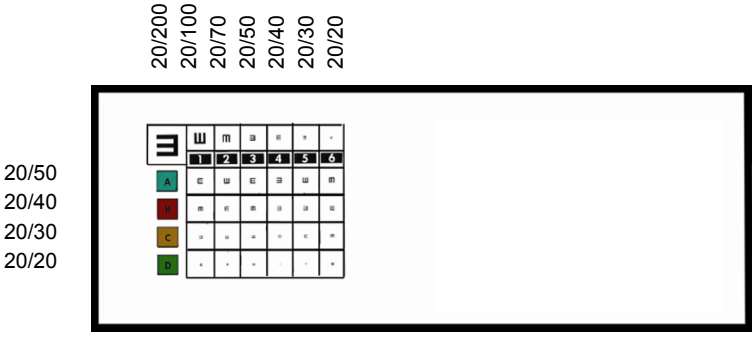
2. Right Eye Illuminated

3. Left Eye Occluded



Ask the child to identify the direction the E’s are pointing: up, down, right, or left, in the top line, starting with the large E. Confirm the last correct answer by having the child read the corresponding line A, B, C, or D.
For example, the child has read through #4 correctly, 20/40 vision. The child should then read line B (20/40).
The correct reading of four of the six symbols confirms 20/40 vision. Proceed to line C; a correct reading of four of the six symbols will confirm 20/30. Then proceed to line D will be the same format. If read correctly, the child has 20/20 vision.

Repeat with opposite eye. (Slide 1000-22)



THE PLUS LENS SYSTEM

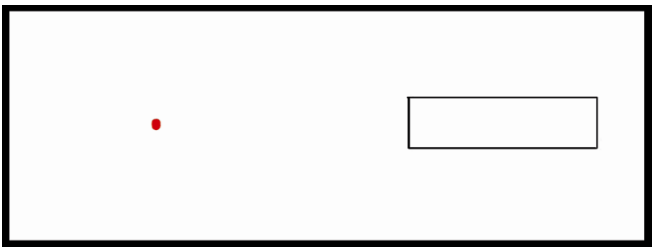
- The plus lens system tests for excessive farsightedness (hyperopia). The plus lens system supplied with the "OPTEC® 1000 Vision Tester" is a plus 1.75D; other powers are available as optional equipment
- *A child scoring 20/40 or poorer on TESTS* #1 & #2 *should not be given the plus lens test. (Tests* #3 & #4)
- Insert the lens into the slot at the top of the face plate with the label away from the subject
- A child with normal vision will **NOT** be able to read the 20/20 line through the plus lenses, a PASS.
- If the child CAN read the 20/20 line through the plus lens, he then **FAILS** the test.
- The ability to clearly read 20/20 through plus lenses is abnormal and could indicate excessive farsightedness.
- This test is very important for school age children

ELEMENTARY TEST SLIDE (1000-22)
VERTICAL & LATERAL PHORIA

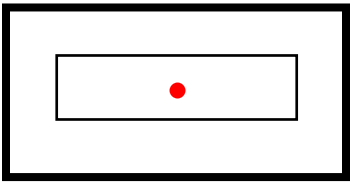
1. Test #3

2. Right Eye ON

3. Left Eye Occluded



Left Eye **Right Eye**



Example of Viewing Slide with Both Eyes

Ask the child if he sees a box, the answer is affirmative. Then tell the child a red ball is being thrown at the box, simultaneously, turn the LEFT Switch ON.

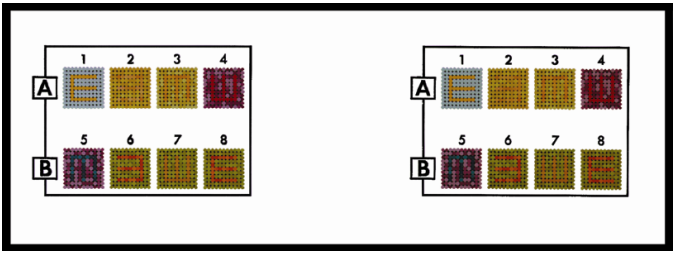
Question: "Where does the ball land, in or out of the box?" Anywhere in the box is PASS, outside the box is FAIL.

Record the initial response.

ELEMENTARY TEST SLIDE (1000-22)
COLOR PERCEPTION

1. Test #4

2. Right & Left Eye Illuminated



Left Eye **Right Eye**

This color perception slide is made for a visual acuity of 20/50 or better in both eyes. If the subject's vision is below 20/50 he will fail the test, not because of a color perception problem, but because of low acuity.

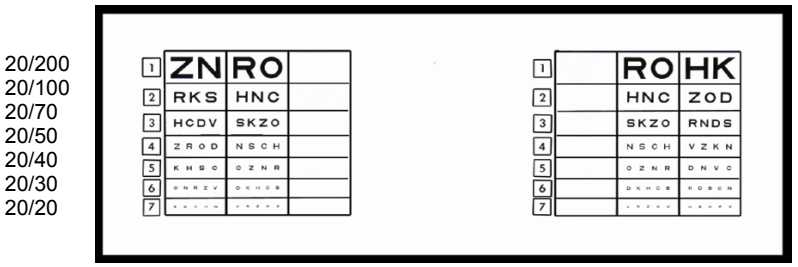
A person with normal color perception can identify the E's in each of the eight blocks.

Acceptable color perception is correctly identifying five of the eight E' s. Blocks 2 and 3 are the most difficult to identify, so it is recommended to test block 1 then 4, 5, 6, 7, 8 and then come back to 2 and 3.

Question: To test, ask the child "Which way the E is pointing in each block? The answer should be up, down, right or left, starting with block #1.

SECONDARY TEST SLIDE (1000-021)
LETTER ACUITY

1. Test #1 & 2
2. Right & Left Eye Illuminated



Left Eye **Right Eye**

Ask the subject, "How many columns of letters do you see?" The answer is three.

Then ask the subject to read line 5 completely. If this is correct, proceed to line 6, if correct proceed to line 7, if correct, the subject has 20/20 vision, or better, in the right eye, left eye, and both eyes together. The scoring key is printed on the record form.

Two or more letters incorrectly identified on any one of lines (3 to 7) PER COLUMN, is considered a FAIL for that acuity level IN THAT COLUMN.

A DIFFERENT ACUITY READING FOR EACH COLUMN IS POSSIBLE WITH THE CENTER COLUMN BEING THE MOST CRITICAL. It is critical because this is the binocular acuity test, while the right and left columns are only monocular acuity tests. Our actual vision is binocular, not monocular.

A monocular acuity test can be administered on the right or left eye by occluding the eye not being tested. With one eye occluded, the subject will only see two columns with letters.

Some of the binocular irregularities that can occur are:

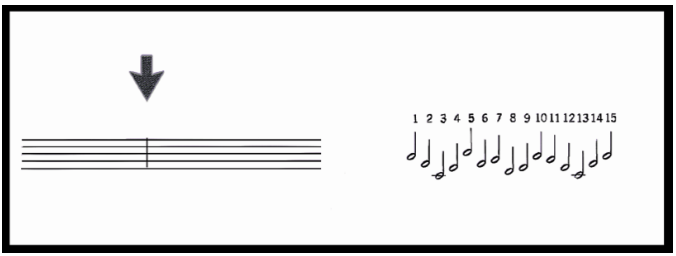
1. Either right or left column appears fuzzy and blurred
2. A complete lack of targets in either right or left column will indicate a vision problem
3. An intermittent disappearance of targets in either the right or left column
4. Failure to fuse the right and left eye area of the slide into three columns of letters

SECONDARY TEST SLIDE (1000-21)
LATERAL PHORIA

1. Test #3

2. Right Eye Illuminated

3. Left Eye Occluded



Left Eye **Right Eye**

Ask the subject, "Do you see a series of musical notes?" If the subject does, ask, "How many?" The answer is 15. Tell the subject a white arrow will appear. Simultaneously turn LEFT switch ON. Ask the subject, "The arrow is pointing to which note?" An immediate response is desired.

The Lateral Phoria Test measures the relative posture of the eyes in the horizontal plane. The arrow pointing to #8 is the ideal orthophoric, but the arrow anywhere between #3 ½ and #12 ½ is within the accepted norms.

- Each number represents one(1) prism diopter of power.
- Exophoric scores are measured from note #8 to #15.
- Esophoric scores are from note #1 to #8.

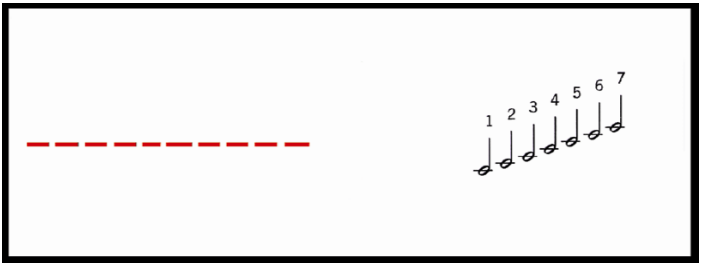
NOTE: This test cannot be given to a subject with vision in only one eye. This is a binocular test only.

SECONDARY TEST SLIDE (1000-21)
VERTICAL PHORIA

1. Test #4

2. Right Eye Illuminated

3. Left Eye Occluded



Left Eye **Right Eye**

Ask the subject, "Do you see a series of musical notes?" If the subject says, “yes”, ask, "How many?" The answer is 7. Tell the subject a red broken line will appear. Simultaneously turn LEFT switch ON.

Ask the subject, "The line crosses the round part of which note?"
The red broken line passing through note #4 is ideal or orthophoric. Anywhere from 2 ½ to 5 ½ is the accepted norm.

The Vertical Phoria Test measures how the eyes work together on the vertical plane.

- Each number represents ½ prism diopter of power.

NOTE: This test cannot be given to a subject with vision in only one eye; this is a binocular test only.

Stereo Optical Company, Inc.

8623 W. Bryn Mawr Ave., Suite 502, Chicago, IL 60631-3501 USA
Phone: 1.773.867.0380 or 1.800.344.9500 Fax: 1.773.867.0388
Email: Sales@StereoOptical.com
www.StereoOptical.com

©Copyright 2009 Stereo Optical Company, Inc.
Optec is a registered trademark of Stereo Optical Company, Inc.

PN 56179